

# WHAT IS



## PALEONTOLOGY?



### 5 Things to Know About Paleontology

1

**Paleontology is the science that studies past life.** Paleontology tells us about life on Earth in the geologic past through the fossilized remains of once living organisms. Combined knowledge from many sciences like biology, geology, ecology, anthropology, archaeology, and even computer science is used to understand the processes that have led to the origination, diversification, and extinction of the many different types of organisms that have lived on Earth.

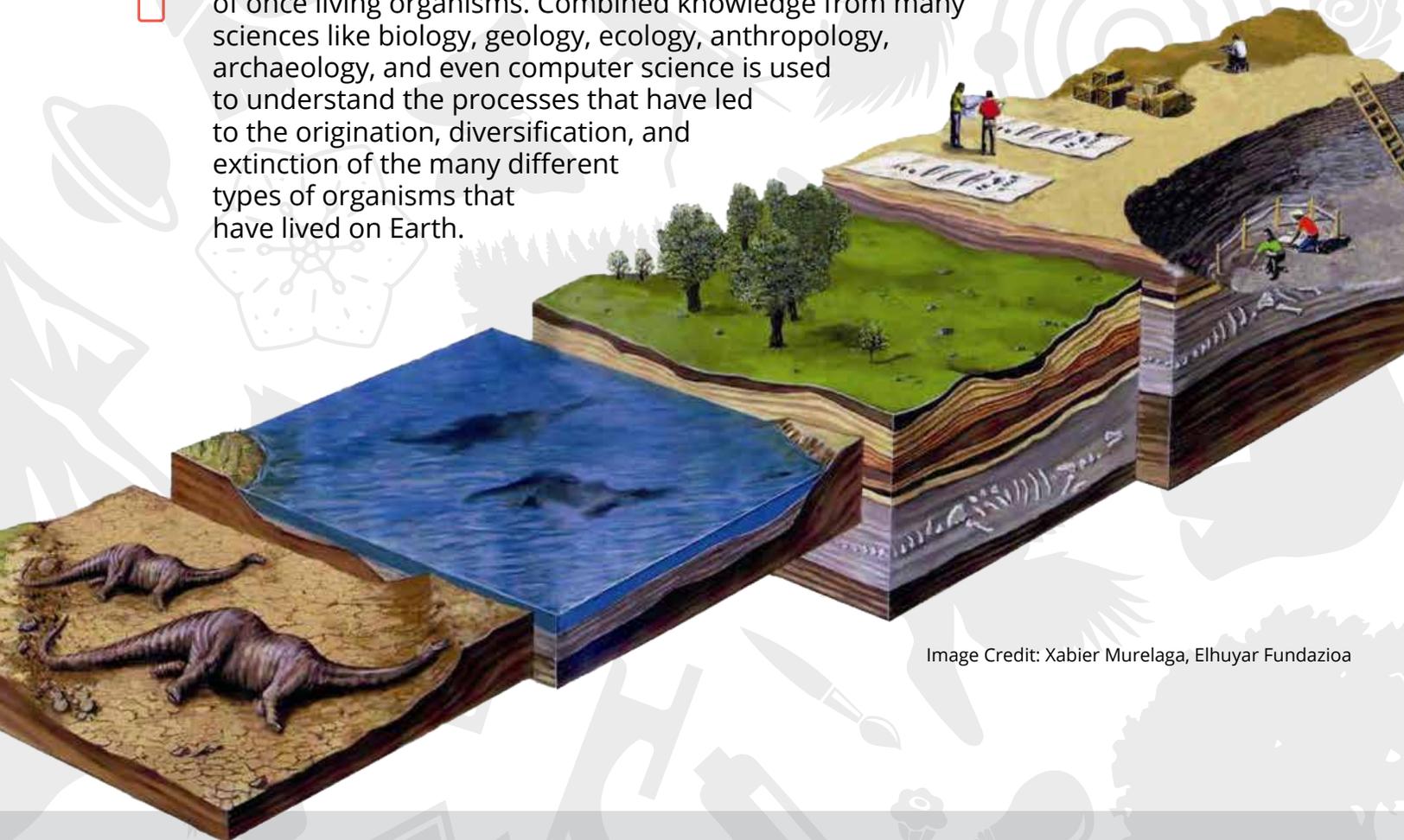


Image Credit: Xabier Murelaga, Elhuyar Fundazioa

2

**Paleontology is NOT just about dinosaurs.** Dinosaurs are one group of animals that lived in the past, but there are many other types of animals, plants, and even microscopic life. Some of these groups of organisms have gone completely extinct and some have developed into the animals and plants we still have today.



Image Credit: Davide Bonabonna

3

**Paleontology shows how life stays the same.** Today as in the past, the animal kingdom includes large predators, small predators, large herbivores, smaller herbivores, insectivores, and the insects themselves. There are small plants, large plants, plants in the canopy and plants near the ground in the plant kingdom. There are fungi, bacteria, and single-celled organisms. The exact organisms may have changed, but these roles still exist today filled by modern animals and plants.

4

**Paleontologists specialize.** Paleontology is an interdisciplinary science. Paleontologists tend to specialize in a specific field of study due to the vast diversity of organisms that lived in the past. Some, but not all, examples include:



**Micropaleontology**

The study of microscopic fossils like bacteria.

**Paleobotany**

The study of fossil plants, including algae and fungi.



**Palynology**

The study of pollen and spore fossils produced by land plants and protists.

**Invertebrate Paleontology**

The study of invertebrate animal fossils, such as mollusks and echinoderms.



**Vertebrate Paleontology**

The study of vertebrate fossils, from primitive fishes, to dinosaurs, to mammals.

**Taphonomy**

The study of the processes of decay, preservation, and the formation of fossils in general.



**Ichthyology**

The study of fossil tracks, trails, and footprints.

**Paleoecology**

The study of interactions between organisms and their environments across geologic time scales.



**Paleoclimatology**

The study of climates for which pre-date direct instrumental measurements and records.

5

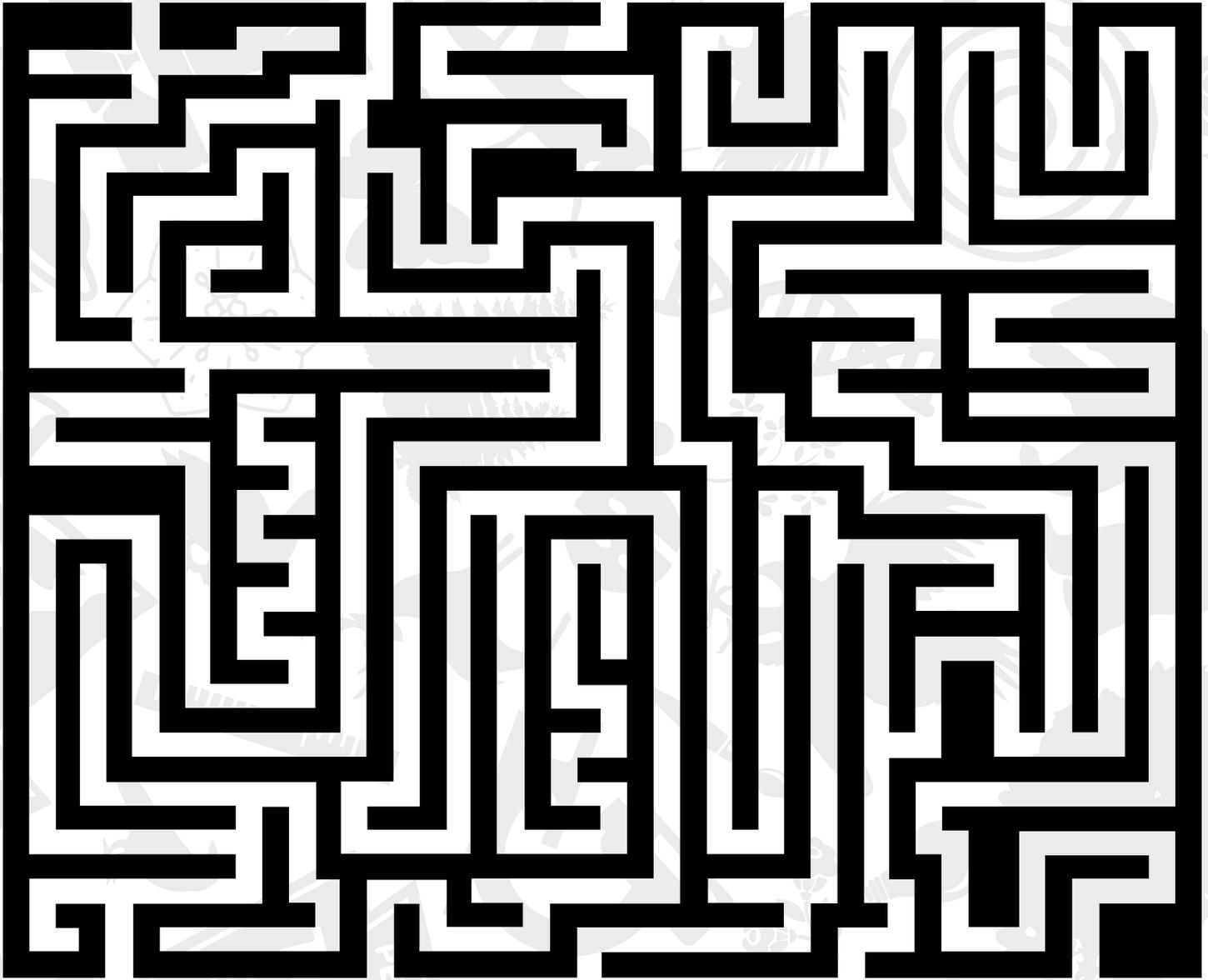
**Paleontology is not just studying fossils.** Beyond fossils, paleontologist also study chemical signatures, geologic evidence, and environmental impacts to gather more information about past climate change, environmental change and its impact on life, and catastrophic events that led to multiple extinctions over time. Paleontology not only tells us what has changed from the past, but the study of paleontology can help us determine how Earth may change in the future. The information discovered helps us determine how to stop dangerous changes and prepare for what may happen in the future.



# Paleontology Maze

Color each paleontologist's block with a different color. Then use that color to solve the maze linking the paleontologists to the specimen they study. Make sure the paths don't overlap! Color the specimen block to match the paleontologist and path.

<b>Vertebrate Paleontologist</b>	<b>Paleobotanist</b>	<b>Ichnologist</b>	<b>Paleo-climatologist</b>	<b>Invertebrate Paleontologist</b>
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# Paleontology Maze Answer Sheet

Vertebrate  
Paleontologist

Paleobotanist

Ichnologist

Paleo-  
climatologist

Invertebrate  
Paleontologist

